

# **KSFMO FUELS INSPECTION CHECKLIST**



## KSFMO FUELS INSPECTION CHECKLIST – 90-30

ITEM NO.	SAFETY FEATURE	REFERENCE	DESCRIPTION
<b>APPLICABLE STATUTES AND REGULATIONS – GENERAL REQUIREMENTS</b>			
INFO	Authority to inspect	KSA 31-133(1)	The state fire marshal shall adopt reasonable rules and regulations for the keeping, storage, use, sale, handling, and transportation of highly flammable materials.
INFO	Definitions		<p><b>AST:</b> Above ground storage tank</p> <p><b>Public Accessed Service Stations:</b> Service stations which the general public can utilize for the purpose of retail sale of fuels into motor vehicles</p> <p><b>Full Service Station:</b> Service station in which all fuel transfer is conducted by the owner/operator or employee.</p> <p><b>Attended Self-Service Station:</b> Service stations in which fuel transfer is conducted by the general public under the supervision of the owner/operator or employees.</p> <p><b>Unattended Self-Service Station:</b> Service station in which fuel transfer is conducted by the general public without supervision like that of an attended self-service station.</p> <p><b>New facility:</b> Established or installed prior to the effective date of current regulations, May 10, 1993.</p> <p><b>Class I Flammable Liquid:</b> Typically a liquid with a flash point below 100 degrees F; examples include gasoline and aviation fuels.</p> <p><b>Class II Flammable Liquid:</b> Typically a liquid with a flash point at or above 100 degrees F and below 140 degrees F; examples include #1 and #2 diesel heating oil.</p>
<b>STORAGE REQUIREMENTS</b>			
A-1	Approved storage tanks	90-30/2-2	<p>Flammable/combustible liquids shall be stored in approved aboveground or underground storage tanks and listed for their current use.</p> <p><b>NOTE:</b> Some existing tanks may not have a label and can be accepted for use provided they have proper atmospheric and emergency venting and a fire valve on piping below the liquid level.</p>
A-2	Tank location	<p>KAR 22-7-8(a)(2)(A)</p> <p>90-30/2.3.1.1</p>	<p>New installations after May 1993 shall have prior KSFM approval. Documentation should be available for inspector verification.</p> <p>Location of existing tanks to buildings, docks, or property lines IS NOT deemed distinctly hazardous and can continue as determined by the inspector.</p>

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A-3	Emergency venting	KAR 22-7-8(a)(2)B 90-30/2-3.5.1	Emergency venting shall be provided for: 1) any size AST used for retail refueling of vehicles; or 2) any other AST of 660 gallons or more capacity; or 3) any existing AST of 1,100 gallons or more used for storage of Class I & II liquids
A-4	Tank gauging	KAR 22-7-8(a)(2)(C)	Tank gauging shall be provided for: 1) any size AST used for retail refueling of vehicles; or 2) any other tank of 660 gallons or more capacity, or 3) any existing AST of 1,100 gallons or more  They shall have a liquid level gauge, or provide a suitable means to prevent overfilling of the tank. "Sticking" of tank is permitted as long as conversion charts are available on-site.
A-5	Containment diking	KAR 22-7-8(a)(2)D	Containment diking shall be provided for: 1) any size AST used for retail refueling of vehicle; or 2) any other tank of 660 gallons or more capacity. Containment capacity shall be 110% of the volume of the largest tank. For example, a 10,000 g tank shall have containment for 11,000 g. 1 gallon = 231 cubic inches and 1 cubic foot of storage = 7.48 gallons.
A-6	Tank foundation	90-30/2-6	Tanks shall rest on the ground or on foundations made of concrete, masonry, or steel. Piling or steel supports with over 12 inches exposed shall have a fire resistance of not less than 2 hours. Existing supports may remain as is, if they do not constitute a distinct life safety hazard, i.e. close by populated areas or waterways.
A-7	Maximum size AST to connect to service station dispensers	KAR 22-7-11	Aboveground tanks of no more than 12,000 gallons may be connected to a dispenser used for refueling vehicles if installation complies with KSFM requirements or if the inspector determines that adequate safeguards and a reasonable degree of safety is maintained.
A-8	Atmospheric venting	90-30/2-1.2 90-30a/2-1.2 90-306	Vent pipes on all aboveground and underground storage tanks shall be 12 feet above grade level and in a clear area away from eaves or opening where vapors could accumulate.
A-9	Corrosion protection	90-30/2-6.1	Storage tanks shall be properly protected and maintained against corrosion.
A-10	Tanks liquid tight	90-30/2-8.3	All tanks shall be maintained liquid tight with no leaks or seepage.

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A-11	Product identification	90-30/2-9.3	All aboveground storage tanks shall have product or contents clearly marked and visible on each tank. Either NFPA 704 HAZARDOUS MATERIALS diamond marking or contents name are acceptable.
A-12	Weeds/ combustibles	90-30/5-5.3.4 90-30/2-3.3.3(i)	All facilities shall be kept free of weeds, trash, and unnecessary combustibles. Combustible storage, weeds or grass, or empty or full drums are not permitted in any diked area.
A-13	Manual/fusible fire valves	KAR 22-7-8(a)(2)B 30-3-3.3	1100 gallon AST or more, or any AST used for vehicle refueling shall have either an internal or external manual/fusible link fire valve installed in or immediately adjacent to any opening below level through which liquid can flow.
<b>TRANSFER REQUIREMENTS – GENERAL</b>			
A-14	Piping – materials liquidtight	90-30/3-2.2	A piping system that is leaking constitutes a distinct hazard and shall be emptied of liquid or repaired in an acceptable manner. This includes pumps and loading racks.
A-15	Piping – protected and supported	90-30A/3-3 90-30/3-5	All piping shall be protected from physical damage and shall be substantially supported.
A-16	Piping – corrosion protection	90-30/3-6	All exposed piping shall be protected against corrosion.
A-17	Check valves	90-30/3.7	All transport unloading lines attached to any AST below the liquid level shall be equipped with a backflow check valve.  NOTE: If loading and unloading is done through a common pip, a backflow check valve is not required provided they have an accessible block valve.
A-18	Piping identification	90-30A/3-9	All fill lines shall be clearly marked or color coded for product identification.
<b>TRANSFER REQUIREMENTS – SERVICE STATION DISPENSERS (GENERAL)</b>			
A-19	Dispenser location	90-30A/4-1.1	Dispensers shall be so located that all parts of the vehicle being fueled will be on the premises of the service station.

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A-20	Dispenser emergency shut-off	90-30A/4-1.2	A clearly identified and easily accessible switch or circuit breaker shall be provided at a location remote from service station dispensing devices which will shut off the power to all dispensers in the event of an emergency.
A-21	Class I/Class II liquids – accidental discharge	90-30A/4-2.1	Class I and Class II liquids shall be transferred only through fixed pumps designed and equipped to allow control of flow and prevent leakage and accidental discharge.
A-22	Class I/Class II liquids – accidental discharge	90-30A/4-2.1	Class I and Class II liquids shall be transferred only through fixed pumps designed and equipped to allow control of flow and prevent leakage and accidental discharge.
A-23	Dispenser controls	90-30A/4-2.3	A control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket or normal position. This control shall also stop the pump when nozzles are returned to their storage position. Any satellite dispensers must meet dispenser requirements. No double-hoses (tee) from a single dispenser outlet are permitted.
A-24	Dispenser – collision protection	KAR 22-7-8(a)(2)(I)	Dispensing devices shall be protected by substantial collision protection at the ends of the dispensing islands.
A-25	Dispenser – anchored	KAR 22-4-8(a)(2)(I) 90-30A/4-2.5	All dispensers shall be mounted on a concrete island and securely bolted in place.
A-26	AST service station – solenoid valve to dispensers	KAF 22-7-8(a)(2)G	If an AST is installed at an elevation which produces a gravity head on a service station dispensing device used to refuel vehicles, it shall have an electric solenoid valve installed adjacent to and downstream from the fire valve.
A-27	Dispenser – pressurized piping system fire/impact valve	KAR 22-7-8(a)(2)F 90-30A/4-3.6	A rigidly anchored emergency shut-off valve, incorporating a fusible link and designed to close automatically in case of severe impact or fire, shall be installed under all dispensers with pressurized piping systems (pump located at or in the storage tank).
A-28	AST supplied dispenser – vacuum actuated anti-siphon valve	KAR 22-7-7(A)(2)	A vacuum-actuated siphon valve shall be installed and rigidly anchored under all dispensers served by AST which creates a gravity head at the dispenser.  NO FIRE VALVE IS REQUIRED IF IT IS A SAFE SUCTION SYSTEM CONNECTED TO UNDERGROUND TANKS OR IF THE AST IS BELOW THE LEVEL OF THE DISPENSER.

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A-29	Dispenser – hose	90-30A/4-2.6	Dispenser hose length shall not exceed 18 feet in length and shall be listed by approved testing laboratory. Cracked or leaking hose shall be replaced.
A-30	Dispenser – hose emergency breakaway device	KAR 22-7-8(2)E	A listed emergency breakaway device shall be installed on all dispensing hoses. When equipped with a retriever, the breakaway device shall be installed between the place where the retriever attaches to the hose and the nozzle.
A-31	Dispenser – automatic nozzles	90-30A/4-1.2	All nozzles shall be the automatic closing type nozzle with or without a latch open device and shall be approved by an approved testing laboratory.
A-32	Dispenser – automatic shut-off	90-30A/4-1.2	A clearly identified and easily accessible switch or circuit breaker shall be provided at a location remote that will shut off the power to all dispensers in the event of an emergency.

### OPERATIONS

A-33	Emergency training	KAR 22-4-10	<p>Each employee involved in fuel transfer into motor vehicles at a retail service station shall be trained in proper procedures in case of fire, overfill, or fuel spill situation. Training shall include handling improper transfer of fuel, types of improper and illegal containers, and instruction on the proper use of a fire extinguisher. Document the training and maintain records for inspection upon request.</p> <p>Retail service stations shall have emergency instructions covering fire, overfill, or fuel spill procedures posted and readily available in the vicinity of all control consoles or attendant locations.</p>
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### OPERATIONS (LOADING/UNLOADING RACK)

A-34	Flexible hose	90-39/5-4.4.1.6	Listed flexible hose may be used where vibration exists and at loading racks for fill liens. Hoses shall be free of cracking, checking or cuts.
A-35	Loading/unloading location	90-39/8-4.4.1.1	Tank vehicle loading and unloading facilities shall be separated from aboveground tanks, buildings and property lines by a distance of at least 25 feet for Class I liquids and 15 feet for Class II liquids measured from the nearest transfer connection.

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A-36	Transport unloading	KAR 22-7-9	Any individual conducting the transfer of flammable or combustible liquids from a transport vehicle to a storage tank governed by the Kansas Fire Prevention Code shall verify the available capacity of the tank prior to starting transfer operations.
A-37	Static protection	90-30/5-4.4.1.2	Provide proper bonding at all facilities where tank vehicles are loaded through open domes. Grounding cable must be attached to a solid ground, i.e. a grounding rod. Grounding to loading rack will not provide a sufficient ground.
A-38	Connection of static bond	90-30/5-4.4.1.4	Bonding connection shall be made to the tank vehicle BEFORE dome covers are raised and shall remain in place until filling is complete and all dome covers are closed and secured.
A-39	Final control flow valves	90-30/5-4.4.1.10	When top loading a tank vehicle with Class I or Class II liquids, the final control valve shall be of the self-closing type and be manually held open except where automatic means are provided to prevent overfilling.
A-40	Downspouts – loading rack	90-10/5-4.4.1.6	When filling into open domes of tank vehicles, transfer shall be through a downspout which extends to near the bottom of the tank.
<b>PREVENTION</b>			
A-41	Fire extinguisher	90-30A/9.8 90-10/4-4.1	Each service station shall provide at least one 40 BC rated fire extinguisher. NOTE: Convenience stores shall have at least one 2A:40BC rated fire extinguisher. Extinguisher shall be maintained annually by a licensed firm.
A-42	Signage	90-30A/9-9	Islands dispensing Class I liquids shall have warning signs with the following equivalent wording: (1) NO SMOKING (2) STOP ENGINE (3) IT IS UNLAWFUL AND DANGEROUS TO DISPENSE GASOLINE INTO UNAPPROVED CONTAINERS. Island dispensing ONLY Class II liquids shall have “NO SMOKING” signs.
A-43	Electrical equipment	90-30A/7.1	Electrical equipment where Class I liquids are stored, handled, or dispensed shall be in an explosive-proof conduit with no exposed wiring or open boxes.



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ITEM NO.	SAFETY FEATURE	REFERENCE	DESCRIPTION
A-44	Heating equipment	90-30A/8.1	Where an open flame or electrical arc located in an area where Class I liquids are dispensed or transferred shall have 1-hour fire-rated separation or be located at least 8 ft above floor level. In lubrication or service rooms where no Class I liquids are dispensed or transferred, heating equipment shall be located at least 18 inches above floor level and must be protected from physical damage.
<b>ATTENDED SELF-SERVICE STATIONS ADDITIONAL REQUIREMENTS</b>			
A-45	Attendant present	90-30A/9-4.5	All attended self-service stations shall have at least one attendant on duty while the station is open for business.
A-46	Emergency shut-off	90-30A/9-4.5	All attended self-service stations shall provide an emergency shut-off control at the attendant's console.
A-47	Clear view of dispensing area	90-30A/9-4.7	The dispensing area shall at all times be in a clear view of the attendant OR shall have a two-way intercom which monitors island activity.
<b>UNATTENDED SELF-SERVICE STATIONS ADDITIONAL REQUIREMENTS</b>			
A-48	Emergency shut-off	90-30A/9-5.3	All unattended self-service stations shall provide emergency controls to shut off all power to all dispensing devices and shall be located 20 feet from, but within 100 feet of, the dispensers.
A-49	Operating/emergency instructions	90-30A/9-5.4 90-30A/9-5.5	<p>Operating and emergency instructions shall be posted and visible in the dispensing area and shall include the following information:</p> <ol style="list-style-type: none"> <li>1) Location of emergency shut-off (unless obvious), and</li> <li>2) Location of fire extinguisher (unless obvious), and</li> <li>3) Emergency instruction which incorporates the following or equivalent wording:</li> </ol> <p>Company Name</p> <p>IN CASE OF FIRE OR SPILL</p> <p>Use emergency shut-off</p> <p>Report to: (Company emergency telephone number)</p> <p>(Local fire department telephone number</p>

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A-50	Fire extinguisher	90-30A/9-8 90-10/4-4.1	A minimum 40BC rated fire extinguisher shall be available for use within 100 ft of the dispenser site. Extinguishers shall be maintained annually by a licensed firm.

